EARTH NETWORKS®

2020

INDIANA
LIGHTNING REPORT

ABOUT THIS REPORT

The 2020 Lightning Report was prepared by Earth Networks using the Earth Networks Total Lightning Network (ENTLN). The following report includes in-cloud, cloud-to-ground, and total lightning data for this state and the surrounding water bodies (if any) throughout 2020. Counts, densities, rankings, Dangerous Thunderstorm Alerts (DTAs), and Thunder Days in this report are from January 1, 2020 to December 31, 2020.

THE EARTH NETWORKS TOTAL LIGHTNING NETWORK (ENTLN)

The lightning data in this report is derived from the Earth Networks Total Lightning Network (ENTLN), which monitors the combination of in-cloud and cloud-to-ground lightning strikes over 100 countries. With over 1,800 sensors, the ENTLN is the most extensive and technologically advanced total lightning network in the world. ENTLN has been specifically deployed to detect real-time lightning and provide advanced warning for severe weather events that could threaten public safety and operational efficiency.

IN THIS REPORT

Table of Contents

REPORT TERMINOLOGY

To help you better understand the insights from this lightning report, we've included definitions of our frequently used report terminology below.

Lightning Pulse: This report measures lightning pulses. A pulse is a surge of electric current in lightning usually accompanied by a burst of light. Pulses are classified as In-cloud (IC) or Cloud-to-Ground (CG).

Lightning Flash: A lightning flash is a collection of pulses close in space and time that approximates the continuous ionized channels of a complete bolt of lightning.

Cloud-to-Ground Lightning (CG): Lightning that happens between opposite charges in a cloud and on the ground.

In-Cloud Lightning (IC): Lightning that occurs between opposite charges within a thunderstorm cloud.

Total Lightning Detection: The combination of all in-cloud and cloud-to-ground lightning activity.

Pulse Density: The number of lightning pulses per square mile per year.

Dangerous Thunderstorm Alerts (DTAs): Earth Networks patented advanced severe weather warnings that notify users of incoming storms up to 45 minutes before storm arrival.

Thunder Days: Any given day where lightning was detected in a certain area.

TOTAL LIGHTNING

is the combination of cloud-to-ground (CG) and in-cloud (IC) lightning strikes
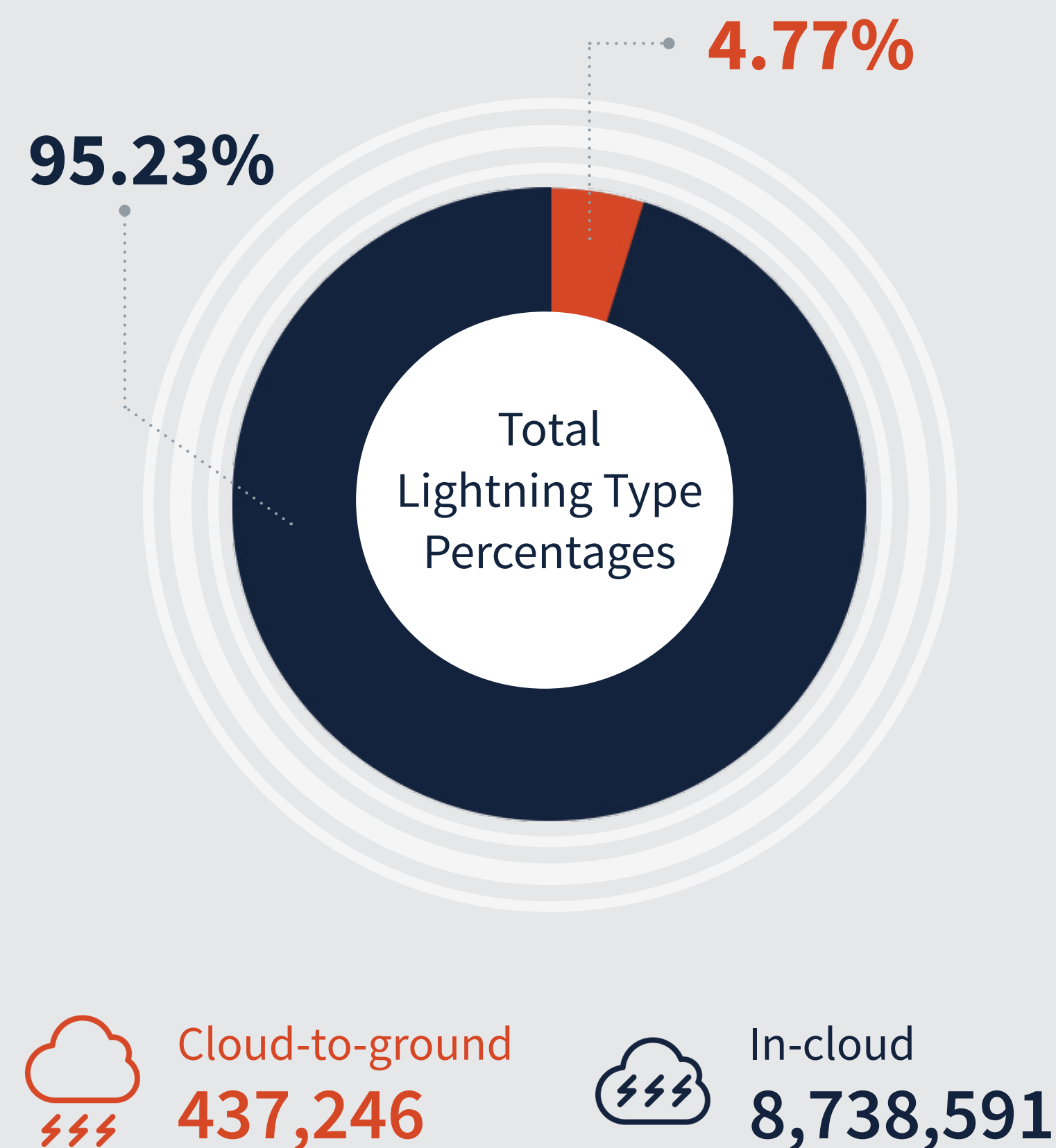
Cloud-to-Ground lightning:
Lightning that happens between opposite charges in a cloud and on the ground

In-Cloud lightning:
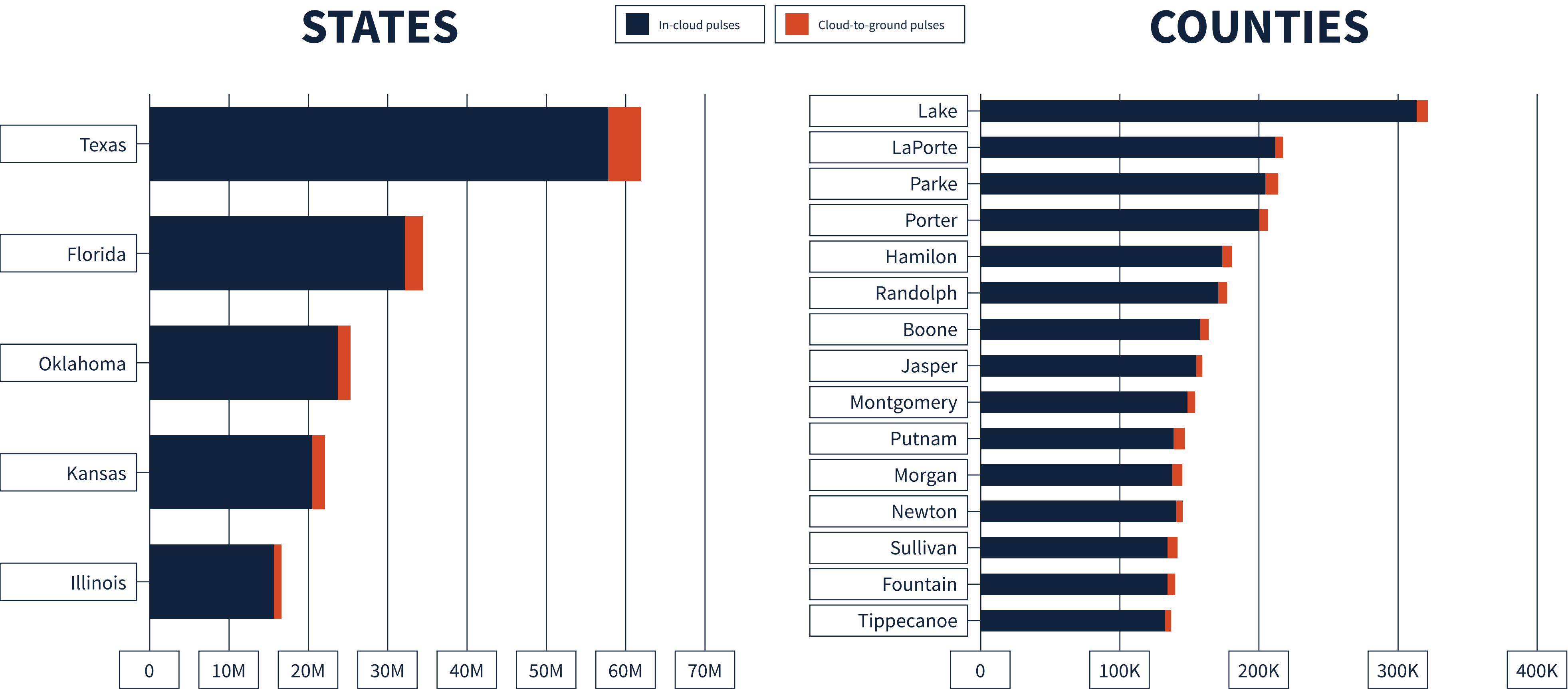Lightning that occurs between opposite charges within a thunderstorm cloud

INDIANA
TOTAL LIGHTNING PULSES
9,175,986

4.77%

95.23%

Total Lightning Type Percentages

Cloud-to-ground
437,246

In-cloud
8,738,591

LIGHTNING COUNT RANKINGS

STATES

Legend: In-cloud pulses · Cloud-to-ground pulses

State	(approx. value)
Texas	~62M
Florida	~34M
Oklahoma	~24M
Kansas	~21M
Illinois	~16M

X-axis: 0, 10M, 20M, 30M, 40M, 50M, 60M, 70M

COUNTIES

County
Lake
LaPorte
Parke
Porter
Hamilon
Randolph
Boone
Jasper
Montgomery
Putnam
Morgan
Newton
Sullivan
Fountain
Tippecanoe

X-axis: 0, 100K, 200K, 300K, 400K

Indiana ranked 18 in total lightning pulses for 2020.

TOTAL (CG+IC) PULSE DENSITY MAP

Total Pulse Density (sqmi)
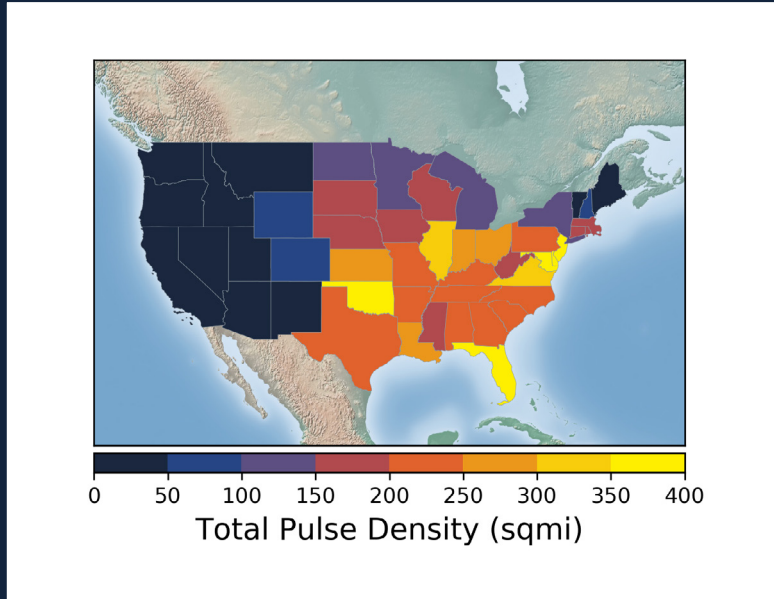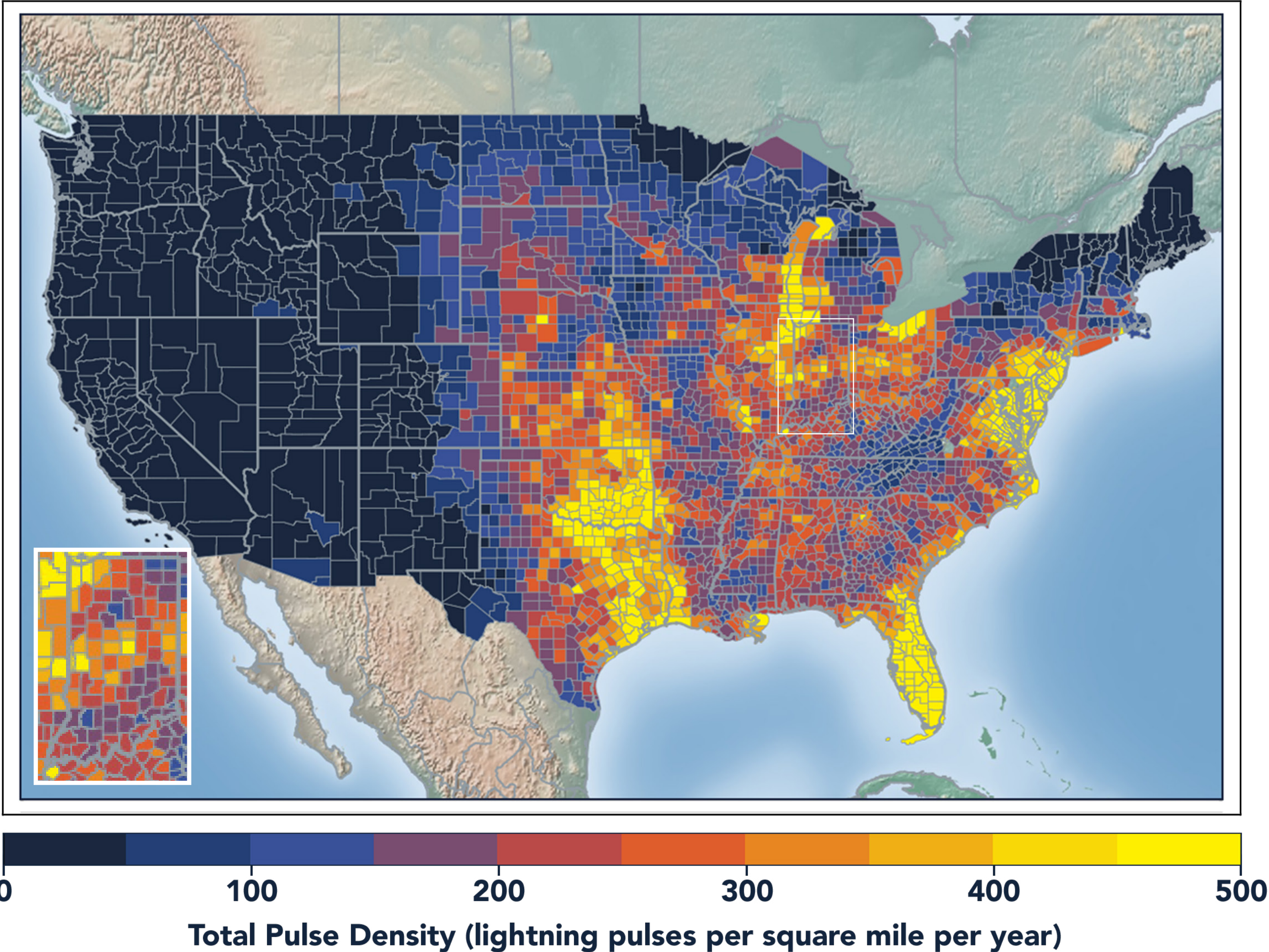
Pulse density is a better indicator of lightning activity than total lightning counts because it enables us to compare different sized areas (like states and counties) fairly.

We cluster pulses together into a flash. With every pulse we detect, we receive a more precise measure of lightning activity. At left, areas in bright yellow experienced the highest lightning pulse density per square mile in 2020.

Total Pulse Density (lightning pulses per square mile per year)

0   100   200   300   400   500

TOTAL PULSE DENSITY RANKINGS

This chart shows the top 15 counties in the state ranked by total pulse density, which is the total lightning divided by the area of the county (in square miles).

COUNTIES
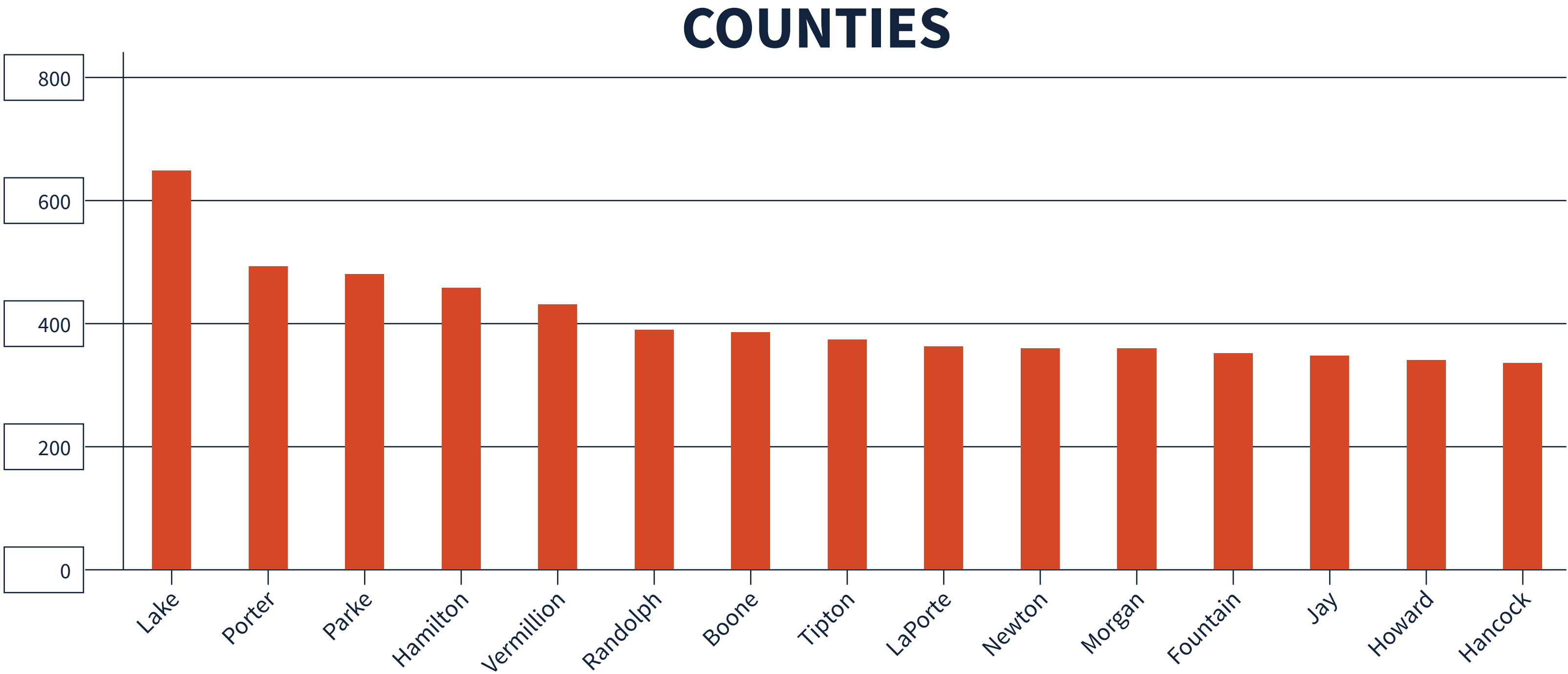
DANGEROUS THUNDERSTORM ALERTS IN THE U.S.

Number of Dangerous Thunderstorm Alerts

Dangerous Thunderstorm Alerts (DTAs), available exclusively to Earth Networks, provide **50% more lead time** to severe storms compared to publicly available alerts.

Earth Networks issued 29,401 Dangerous Thunderstorm Alerts (DTAs) in 2020. This year's map clearly shows the persistent drought conditions that have plagued the South and Southwest.
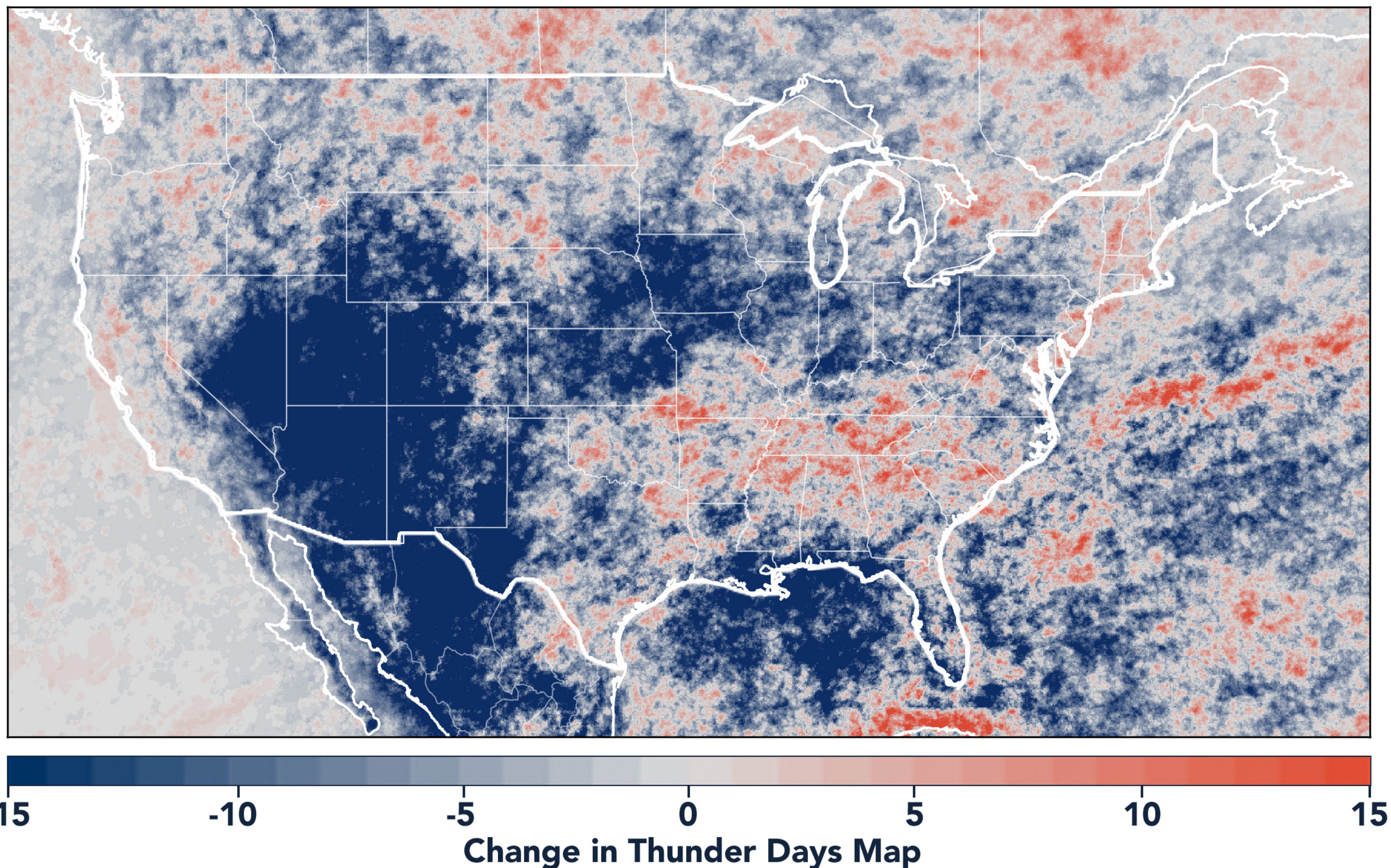
DANGEROUS THUNDERSTORM ALERTS BY MONTH

Earth Networks issued 297 Dangerous Thunderstorm Alerts for the state in 2020.

INDIANA

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
0	0	6	36	14	67	133	32	8	1	0	0
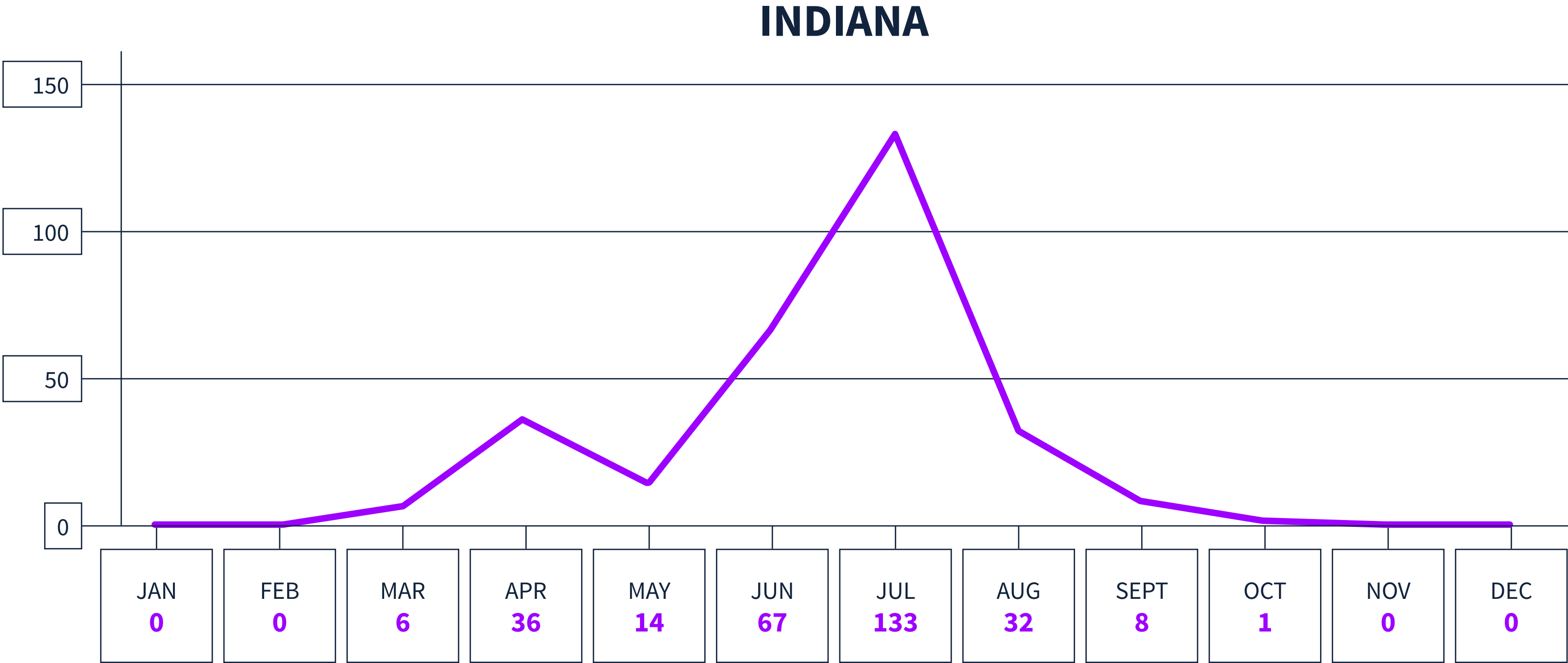
TOTAL STATE THUNDER DAYS: 149

Change in Thunder Days Map

-15   -10   -5   0   5   10   15

Thunder Days are the days we detected lightning over a certain area. The map shows a deviation from our 7-year average and illustrates our overall finding that lightning decreased about 15% from 2019.

This year, the Southwest and Midwest experienced significantly less lightning than in previous years due to a persistent drought and weak monsoon. States in the Southeast experienced a substantial uptick in lightning activity this year, including Tennessee, North Carolina, South Carolina, Virginia, West Virginia, Georgia, Alabama, Mississippi, Florida, Louisiana, Arkansas, and Kentucky.

EARTH
NETWORKS®

THANK YOU

For additional insights or permission to use data or graphics from this report, please contact us at: info@earthnetworks.com or call 1 301.250.4000

APPENDIX

This table ranks all U.S. states by total lightning pulses, including in-cloud and cloud-to-ground from highest to lowest. Total number of thunder days in each state (the total number of days in the year when lightning was detected by ENTLN) are also included. The period covered is January 1, 2020 to December 31, 2020.

STATE	TOTAL LIGHTNING PULSES	TOTAL THUNDER DAYS
TX	63,683,799	278
FL	35,430,198	246
OK	26,159,420	205
KS	23,125,675	179
IL	16,785,149	166
NE	14,433,875	178
MO	14,081,658	184
VA	13,234,163	176
GA	13,016,803	217
OH	12,009,955	143
SD	11,940,870	156
LA	11,787,379	230
AL	11,448,621	202
AR	11,417,155	211
NC	10,666,834	203
PA	10,024,978	151
MS	9,236,279	210
IN	9,175,986	149
IA	9,121,097	140
WI	8,812,327	145
TN	8,458,373	186
MN	8,009,792	148
KY	7,974,926	166
MI	7,769,382	159
ND	7,634,287	131
SC	7,454,219	197
CO	7,360,769	185
MD	6,666,766	124
NM	5,819,550	196
MT	5,107,593	154
WY	4,951,397	166
NY	4,943,122	152
WV	4,684,226	150
AZ	3,532,759	151
NJ	3,465,297	96
UT	1,951,574	162
ID	1,518,171	172
MA	1,267,046	80
NV	1,237,862	146
DE	1,168,918	89
CA	956,187	151
OR	915,855	132
CT	802,252	70
NH	618,242	70
WA	402,333	117
ME	358,334	81
VT	354,695	75
RI	190,992	42
DC	44,204	47

APPENDIX

This table ranks all counties in the state by total lightning pulses, including in-cloud and cloud to-ground from highest to lowest. Total number of thunder days in each county (the total number of days in the year when lightning was detected by ENTLN) are also included. The period covered is January 1, 2020 to December 31, 2020.

COUNTY	TOTAL LIGHTNING PULSES	TOTAL THUNDER DAYS
Lake County	322,065	59
LaPorte County	217,346	52
Parke County	213,597	52
Porter County	205,887	56
Hamilton County	180,350	55
Randolph County	177,115	57
Boone County	163,739	56
Jasper County	159,043	57
Montgomery County	153,446	59
Putnam County	146,280	57
Morgan County	144,643	45
Newton County	144,396	58
Sullivan County	141,365	53
Fountain County	139,149	55
Tippecanoe County	136,201	58
Madison County	134,479	56
Jay County	134,153	51
St. Joseph County	132,311	50
Marion County	131,205	53
Greene County	130,877	59
Wayne County	127,562	62
Clinton County	124,463	53
Kosciusko County	124,111	51
Jackson County	120,588	53
Marshall County	118,150	50
Vigo County	116,099	51
Hendricks County	115,000	58
Gibson County	113,497	56
Vermillion County	110,734	55
White County	110,323	50
Delaware County	109,929	56
Allen County	109,572	54
Owen County	109,567	55
Wells County	109,375	53
Harrison County	104,133	70
Elkhart County	103,730	52
Hancock County	103,204	51
Huntington County	102,653	53
Monroe County	102,340	52
Benton County	100,317	50
Howard County	99,818	47
Posey County	98,915	54
Washington County	97,404	53
Tipton County	97,221	47
Starke County	95,545	45
Pulaski County	94,989	50
Adams County	94,812	53

COUNTY	TOTAL LIGHTNING PULSES	TOTAL THUNDER DAYS
Wabash County	94,802	51
Ripley County	93,545	56
Grant County	92,230	49
Knox County	92,091	54
Warrick County	91,599	51
Perry County	86,345	62
Clay County	84,987	49
Whitley County	83,703	46
Clark County	83,696	58
Franklin County	81,036	53
Henry County	79,113	58
Dubois County	78,979	53
Johnson County	78,510	48
Rush County	78,040	53
Warren County	77,264	51
Lawrence County	77,254	57
Spencer County	75,510	63
Noble County	73,081	48
Brown County	72,735	51
Bartholomew County	72,472	49
Fulton County	70,387	47
Miami County	69,133	48
Jefferson County	65,846	55
Crawford County	65,769	63
Decatur County	65,435	50
Orange County	65,096	53
Carroll County	64,039	54
DeKalb County	63,706	49
Shelby County	63,226	53
Daviess County	62,814	43
Jennings County	60,684	49
Vanderburgh County	57,434	52
LaGrange County	53,980	49
Dearborn County	53,029	56
Blackford County	52,066	42
Pike County	51,429	48
Union County	51,310	47
Martin County	51,176	49
Cass County	48,989	49
Switzerland County	42,004	52
Fayette County	34,671	48
Steuben County	34,028	43
Floyd County	25,826	50
Scott County	25,033	46
Ohio County	10,037	53